

1 31. (new) A flash apparatus operable each time a flash picture is taken with a digital
2 camera, said apparatus comprising:

- 3 a) means for activating a flash with a first flash energy lower than the energy
4 normally required for an acceptable final flash energy level;
5 b) means for grabbing a first image of a subject located a distance from said
6 camera to create first image intensity data;
7 c) means for analyzing said first image intensity data to determine a first
8 degree of exposure, wherein the analyzing does not require knowledge of
9 said distance;
10 d) means for scaling said first flash energy to determine a final flash energy;
11 and
12 e) means for activating said flash at said final flash energy level for taking a
13 picture;

14 wherein the apparatus is integrated with the camera and operates automatically each time the
15 camera takes a flash picture.

REMARKS

Applicants have cancelled claims 9-10 and 23-24, which were allowed in the parent case. Claims 1, 14, 17, and 25 are also cancelled, and claims 28-31 are presented. Claims 28, 29, 30, and 31 correspond to claims 1, 14, 17, and 25, respectively, of the parent case (as most recently amended). For convenience, we have shown changes to claims 28-31 as if amending former claims 1, 14, 17, and 25, as pending prior to the Office Action in the parent case dated January 24, 2000.

Section 102 Rejection

Item 1 of the Office Action dated January 24, 2000, in the parent case states that

“Ota discloses flash energy level control can be determined by distance information or color information,”

and

“it would have been obvious to one of ordinary skill in the art at the time the invention was made that flash control does not have to be distance based calculation.”

Applicant respectfully traverses this argument. Ota does not disclose the use or control of a flash for taking a picture. Ota only discloses control of exposure by adjusting the iris and shutter (column 13, lines 35-39). Applicants' claims describing flash control are therefore not described by Ota.

Item 2 of the Office Action rejects claims 4, 13, 16 and 27 under 35 U.S.C. 112, 2nd paragraph, as indefinite because *“the Examiner is unclear to applicant's intended meaning.”* The use of the terminology “minimum flash energy level” is considered unclear since the final flash energy is stated as higher than the previous flash energy in the base claims. Applicants acknowledge the need to clarify the claims and have amended claim 28 accordingly to change “energy required” in line 6 to “energy normally required.” This change avoids claiming that the final flash is higher in energy than the preliminary flashes. The “minimum” flash of claims 4, 13, 16 and 27 is a minimum preset value that is used when all of the pre-flashes indicate an over-exposed condition. Applicants believe this amendment clarifies claims 4, 13, 16 and 27, and that they are now distinguishable over Yamamoto and Ota and are allowable.

Item 3 of the Office Action dated January 24, 2000, in the parent case rejects claims 1-5, 7, 8, 11, 12-20, 22, and 25-27 under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Ota. Regarding independent claim 1 of the parent claim (claim 28 as presented herein), Yamamoto does not disclose a calibration that occurs each time a picture is taken. Yamamoto's

process is a one-time factory calibration and requires distance information. Thereafter, for each picture taken, the Yamamoto camera measures the distance to the subject and refers to the factory calibration to set the flash energy. No pre-flashes are used. Applicants are unaware of a camera that is known to automatically adjust a flash by using pre-flashes and analyzing corresponding image data prior to taking each picture. Ota does not teach the use of a flash and controlling a flash to achieve proper exposure. Ota teaches adjusting the iris and shutter. Applicants respectfully request specific reference to publications or products prior to the filing date of the parent application that perform the processes according to claims 28-31 (claims 1, 14, 17, and 25 of the parent case) in order to verify the corresponding statements in the Office Action. Applicants believe that independent claims 28-31 as amended are clarified and are now allowable.

Regarding independent claim 14 of the parent case (claim 29 as presented herein), the Office Action states

"Since grabbing an image means taking a picture, the steps are done during taking a picture."

In explanation, when a consumer takes a picture with Yamamoto's camera, the camera measures the distance to the subject and with this information refers to a factory calibration chart in camera memory which gives the required flash energy data from which the camera activates the flash. This is an entirely different procedure from that defined by any of the independent claims 28-31. Yamamoto's camera does not use a pre-flash and analyze corresponding image data to determine a flash energy level when a picture is taken by a consumer. The only repetitious use of flashes in the Yamamoto disclosure are those required to determine the factory calibration chart, which is a one lens manually assisted process performed at the factory. In explanation, the Yamamoto process is directed to a one-lens factory calibration of the camera, and therefore does not meet the requirement of claim 29 which requires that the process be done each time a flash picture is

taken. In order to further distinguish the independent claims 28-31 from Yamamoto, Applicants have added the limitation that the steps be performed automatically. The calibration procedure of Yamamoto requires operator's invention in addition to pressing a shutter button.

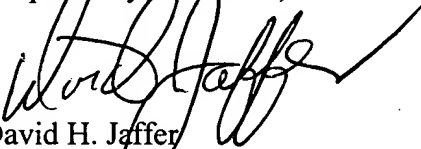
Regarding independent claims 17 and 25 of the parent case (claims 30 and 31 as presented herein) , these claims are apparatus claims corresponding to the method claims 1 and 14 of the parent case. As a result, the Office Action's reasons for rejection are essentially the same as those given in reference to claims 1 and 14 of the parent case. Applicants' response is also the same as stated above in reference to claims 1 and 14 of the parent case (claims 28 and 29 as presented herein). The Yamamoto camera does not contain apparatus for performing pre-flashes and evaluating corresponding image data to determine a flash energy each time a picture is taken.

In summary of the above, Applicants believe that independent claims 28-31 are now allowable, and that the remaining dependent claims are also allowable in adding further limitation to allowable claims.

CONCLUSION

Applicants respectfully request a Notice of Allowance. If any further questions should arise prior to allowance, the Examiner is invited to contact the undersigned at the number set forth below.

Respectfully submitted,



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